IV.2. Noise Level Data Analysis

The location, weighted average dB, and maximum dB of each noise level measurement station are presented in Map 2. The data analysis for noise levels of background and train movements are followed.

IV.2.1. Background Noise Levels

At a distance of 100 feet from the railroad tracks the average noise levels were 64 dBA in the daytime and 59.5 dBA at night. The average noise levels at 300 feet from the tracks were 58.3 dBA in the daytime and 51.7 dBA at night. In general, the average noise levels, during daytime and night, are higher near Arendell Street than those 300 feet away from the railroad due to the heavier traffic. The daytime average noise levels averaged about 5 dBA and 7 dBA higher than that at night at 100 feet and 300 feet from the railroad, respectively. Noise levels recorded during the daytime and night were affected by cars, trucks, motorcycles, and jet planes. By using Figure 2 to calculate the source noise level, it is found that the daytime traffic noise levels contributing to the increase of total noise level increase are 62.2 dBA and 57.3 dBA at 100 feet and 300 feet from the railroad, respectively. There is no particular trend for the maximum noise levels being recorded at 100 feet and 300 feet from the railroad. However, the high noise levels are generated more often along Arendell Street due to heavier traffic.

IV.2.2. Train Noise Levels

The average train noise levels were measured as 73.2 dBA and 61 dBA at 100 feet and 300 feet from the railroad, respectively. The increases of average noise level attributed to train movement are about 9 dBA at 100 feet and 2.7 dBA at 300 feet from the railroad during the daytime; the respective increases are 13.7 dBA and 9.3 dBA at night. Therefore, the increase of noise levels due to train movements is more noticeable at nights than that during the daytime. It was observed in Map 2 that the instantaneous maximum noise level being generated by train movements is not always greater than that during the daytime and night.

IV.3. Discussion

The relationship of sound levels versus human response was developed by the EPA and is listed in Table 10. The sound levels having been measured in the Town of Morehead City are: 50 dBA to 67 dBA during the normal daytime, 47 dBA to 67 dBA at nights and 59 dBA to 76.3 dBA during the train movements. Comparing to Table 10 neither the average nor the maximum noise levels being measured at designed stations, with or without the train movements, has exceeded the hearing damage level of 90 dBA.